

* W E L C O M E T O T H E *
* U. S. P A T E N T T E X T F I L E *
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=> s malleable (p) (coil (3a) (helical or helix))

5461 MALLEABLE
220568 COIL
77391 HELICAL
18278 HELIX
L1 13 MALLEABLE (P) (COIL (3A) (HELICAL OR HELIX))

=> d 1 kwic

US PAT NO: 5,607,094 [IMAGE AVAILABLE]

L1: 1 of 13

DETDESC:

DETD(14)

Referring to FIGS. 2 and 4, the flexible tubular support shaft 76 comprises a dual **helical coil** structure comprising a first elongated helical member 172 and a second elongated helical member 174 which are concentrically wound together. . . . member 172 alternately interspersed with the coils 178 of the second helical member 174. As shown in FIG. 4, each **coil** 176 of the **helical** member 172 has a round cross section. Each **coil** 178 of the **helical** member 174 has a triangular, wedge-shaped cross section defining a pair of inwardly sloped surfaces 180 which engage the round. . . . a rounded outer surface to prevent the trapping of surgical gloves during use of the surgical stapling instrument 50. The **helical coil** members 172 and 174, which are preferably made of stainless steel, allow the flexible shaft 76 to be bent in any radial direction relative to the longitudinal axis or centerline 54 of the support shaft assembly 70. Inside the **helical coil** members 172 and 174 is a concentrically mounted cable support tube 182, preferably made of a **malleable** metal such as aluminum, which allows the flexible shaft 76 to assume its bent or curved shape. The cable support. . . .

DETDESC:

DETD(15)

In . . . direction from its straight configuration. After bending, the flexible support shaft 76 maintains its bent shape until further manipulated. The **malleable** cable support tube 182 prevents the bent support shaft 176 from inadvertently straightening. This shape retention feature permits access of. . . . into the pelvic cavity while avoiding contact of the actuator handle assembly 80 with the viscera or body wall. The **helical coil** members 172 and 174 provide a geometry such that the axis of the shaft assembly 70 remains a substantially constant. . . . This feature avoids any undesirable change in length which would result in motion of the taut cable system. The twin **helical coil** construction also provides a solid load path which resists the compressive forces during closure and firing while avoiding any tendency.

=> d his

(FILE 'USPAT' ENTERED AT 14:16:09 ON 19 FEB 1998)
L1 13 S MALLEABLE (P) (COIL (3A) (HELICAL OR HELIX))

=> d 1-13

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2. 5,603,443, Feb. 18, 1997, Surgical stapling instrument with articulated stapling head assembly on rotatable and flexible support shaft; George A. Clark, et al., 227/178.1, 19, 176.1 [IMAGE AVAILABLE]
3. 5,465,894, Nov. 14, 1995, Surgical stapling instrument with articulated stapling head assembly on rotatable and flexible support shaft; George A. Clark, et al., 227/175.1, 19 [IMAGE AVAILABLE]
4. 5,452,836, Sep. 26, 1995, Surgical stapling instrument with improved jaw closure and staple firing actuator mechanism; Thomas W. Huitema, et al., 227/176.1, 8, 19 [IMAGE AVAILABLE]
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6. 5,294,749, Mar. 15, 1994, Surface mountable molded electronic component; James V. Lauder, et al., 174/52.2, 35R; 257/787; 336/96; 361/773, 816 [IMAGE AVAILABLE]
7. 5,274,947, Jan. 4, 1994, Threadable fish hook bait retainer; Timothy Griffiths, 43/44.2, 44.4, 44.8 [IMAGE AVAILABLE]
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11. 4,813,126, Mar. 21, 1989, Apparatus and method for fabricating magnetic devices; James A. Williamson, 29/729, 605; 72/136, 137 [IMAGE AVAILABLE]
12. 4,669,533, Jun. 2, 1987, Cooling and filtering unit for hydraulic drive fluid; Karl Hehl, 165/47, 119, 160, 163, 179, 184 [IMAGE AVAILABLE]
13. 4,467,959, Aug. 28, 1984, Heat exchanger and vaporizer for a stove flue; Charles F. Laviguer, 237/55; 122/20B; 126/113; 165/901 [IMAGE AVAILABLE]